



ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of Invention	IN SITU THERMAL PROCESSING OF A HYDROCARBON CONTAINING FORMATION TO PRODUCE A MIXTURE WITH OXYGENATED HYDROCARBONS																																								
<p>Application Number: 09/840936 Confirmation Number: 5994 First Named Applicant: Etuan Zhang Attorney Docket Number: 5659-03400 Examiner: Unknown Unknown Search string: (1646599 or 3952802 or 4010800 or 3892270).pn.</p> <p style="text-align: right;">RECEIVED MAY 28 2003 TC 1700</p>																																									
US Patent Documents																																									
<p>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</p>																																									
<table border="1"><thead><tr><th>Init</th><th>Cite.No.</th><th>Patent No.</th><th>Date</th><th>Patentee</th><th>Kind</th><th>Class</th><th>Subclass</th></tr></thead><tbody><tr><td>TN</td><td>1</td><td>1646599</td><td>1927-10-25</td><td>Schaefer</td><td></td><td></td><td></td></tr><tr><td></td><td>2</td><td>3952802</td><td>1976-04-27</td><td>Terry</td><td></td><td></td><td></td></tr><tr><td></td><td>3</td><td>4010800</td><td>1977-03-08</td><td>Terry</td><td></td><td></td><td></td></tr><tr><td>↓</td><td>4</td><td>3892270</td><td>1975-07-01</td><td>Lindquist</td><td></td><td></td><td></td></tr></tbody></table>		Init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass	TN	1	1646599	1927-10-25	Schaefer					2	3952802	1976-04-27	Terry					3	4010800	1977-03-08	Terry				↓	4	3892270	1975-07-01	Lindquist			
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TN	1	1646599	1927-10-25	Schaefer																																					
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↓	4	3892270	1975-07-01	Lindquist																																					
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<p>Note: Remarks are not for responding to an office action.</p> <p>Foreign applications and other art will be submitted on a PTO-1449 form</p>																																									
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<table border="1"><tr><td>Examiner Name</td><td>Date</td></tr><tr><td></td><td>TN</td></tr></table>		Examiner Name	Date		TN																																				
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Application:



09/840936

Confirmation: 5994

Applicant(s): Etuan Zhang

Docket
Number: 5659-03400

Group Art Unit:

Examiner: Unknown

search string: (3221811 or 3987851 or 4042026 or 4005752 or 5868202 or 5126037 or 3477058 or 3580987).pn.

04/22/2003 MDAHTE1 00000004 501505 09840936

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US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents


init	Citation No.	Patent Number	Date	Bar Code	Patentee	Class	Subclass
TN	P01	3221811	1965-12-07		Prats		
TN	P02	3987851	1976-10-26		Tham		



TN	P03	4042026	1977-08-16		Pusch et al.
	P04	4005752	1977-02-01		Cha
	P05	5868202	1999-02-09		Hsu
	P06	5126037	1992-06-30		Showalter
	P07	3477058	1968-11-04		Vedder et al.
✓	P08	3580987	1971-05-25		Priaroggia

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Examiner Name	Date
	09/22/04



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IN SITU THERMAL PROCESSING OF A HYDROCARBON CONTAINING FORMATION TO PRODUCE A MIXTURE WITH OXYGENATED HYDROCARBONS

Application: 
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search string: (4087130 or 4537252 or re30019 or 2623596 or 3775185 or 4524113 or 5284878 or 5767584 or 5955039 or 4091869 or 4513816 or 0094813 or 5008085 or 4099567 or 0048994 or 6485232 or 20020018697).pn.

09/840936 ADDRESS 00000064 501505 09840936

09/840936 180.00 CH

US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

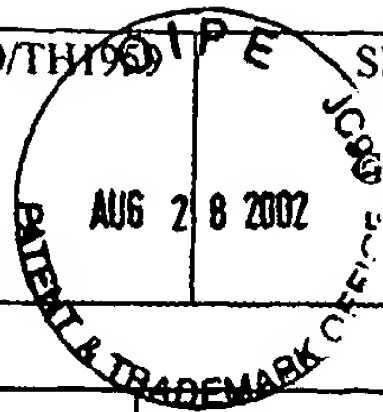
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TN	P23	4087130	1978-05-02		Garrett		
TN	P24	4537252	1985-08-27		Puri		

TM	P25	re30019	1979-06-05		Lindquist
	P26	2623596	1952-12-30		Whorton et al.
	P27	3775185	1973-11-27		Kunz et al.
	P28	4524113	1985-06-18		Lesieur
	P29	5284878	1994-02-05		Studer et al.
	P30	5767584	1998-06-16		Gore et. al
	P31	5955039	1999-09-21		Dowdy
	P32	4091869	1978-05-30		Hoyer
	P33	4513816	1985-04-30		Hubert
	P34	0094813	1869-09-14		Dickey
	P35	5008085	1991-04-16		Bain et al.
	P36	4099567	1978-07-11		Terry
	P37	0048994	1865-07-25		Parry
✓	P38	6485232	2002-11-26		Vinegar et al.

Published Applications

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Citation No.	Patent Number	Date	Bar Code	Patentee	Class	Subclass
TM	U01	20020018697	2002-02-14		Vinegar et al.		

Form PTO-1449 (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		ATTY. DKT. NO. 5659-03400/TH196		 SERIAL NO. 09/840,936 GROUP: 1764			
		APPLICANT: Zhang et al.		FILING DATE: April 24, 2001			
U.S. PATENT DOCUMENTS							
EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
TN	G5	3,766,982	Oct-73	Justheim			
↓	G7	3,599,714	Aug-71	Messman et al.			
↓	G8	4,043,393	Aug-77	Fisher et al.			
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)							
TN	G6	Rogers, Rudy E. "Coalbed Methane: Principles and Practice" Prentice-Hall, Inc. 1994, pp. 164-165.					
TN	G9	Hyne, Norman J. Geology for Petroleum Exploration, Drilling, and Production. McGraw-Hill Book Company, 1984, p. 264.					

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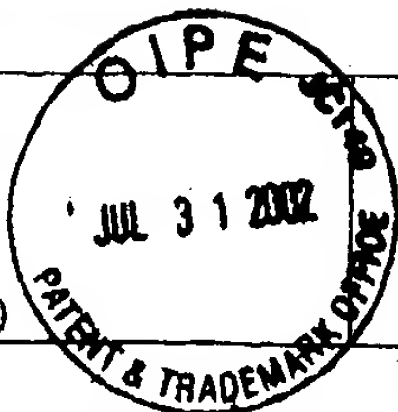
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DATE CONSIDERED: 09/22/04

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List of Patents and Publications
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ATTY. DKT. NO. 5659-03400/TH1959

SERIAL NO. 09/840,936

APPLICANT: Zhang et al.

GROUP: 1764

FILING DATE: April 24, 2001

U.S. PATENT DOCUMENTS

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JN	G5	3,766,982	Oct-1973	Justheim			

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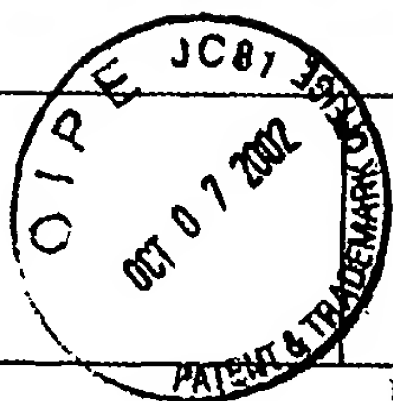
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TN	H1	4,093,025	June 78	Terry			
	H3	4,895,206	Jan-90	Price			
	J1	326,439	Sep-1885	McEachen			
	J2	1,681,523	Feb-1928	Downey et. al.			
	J3	2,244,256	Jun-1941	Looman			
	J4	2,714,930	Aug-1955	Carpenter			
	J5	3,547,193	Dec-1970	Gill			
	J6	3,562,401	Feb-1971	Long			
	J7	4,089,374	May-1978	Terry			
	J8	4,423,311	Dec-1983	Varney, Sr.			
	J9	4,489,782	Dec-1984	Perkins			
	J10	4,626,665	Dec-1986	Fort, III			
	J11	4,694,907	Sep-1987	Stahl et. al.			
	J12	5,182,792	Jan-1993	Goncalves			
	J13	5,402,847	Apr-1995	Wilson et. al.			
	J14	5,491,969	Feb-1996	Cohn et. al.			
	J15	5,621,844	Apr-1997	Bridges			
	J16	6,244,338	Jun-2001	Mones			
	J17	6,389,814	May-2002	Viteri et al.			
	J18	6,412,559	Jul-2002	Gunter et al.			
	J20	3,680,633	Aug-1972	Bennett			
✓	J21	4,508,170	Apr-1985	Littman			

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EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
TN	J19	97/01017	Jan-1997	WO			

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

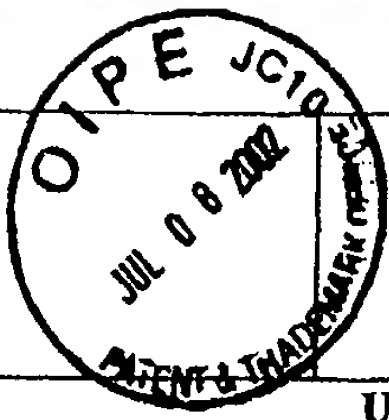
TN	H2	Hobson, G.D., Modern Petroleum Technology, Halsted Press, Applied Science Publishers LTD. 1973, pp. 786, 787					
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EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
TN	F1	4,252,191	Feb-1981	Pusch et al.			
TN	F2	3,310,109	Mar-1967	J. W. Marx et al.			
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)							
TN	F3	Thermal, Mechanical, and Physical Properties of Selected Bituminous Coals and Cokes, J. M. Singer and R. P. Tye, US Department of Interior, Bureau of Mines (1979) Government Report No. 8364.					

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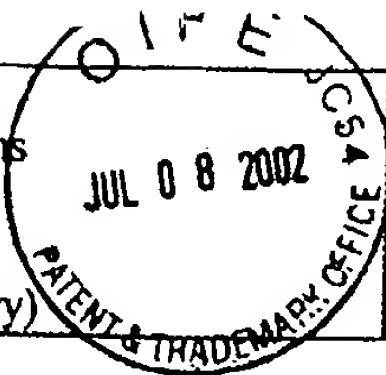
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U.S. PATENT DOCUMENTS

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
TN	G1	3,675,715	Jul-1972	Speller, Jr.			
TN	G2	3,809,159	May-1974	Young et al.			
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)							
TN	G3	Rogers, Rudy E. "Coalbed Methane: Principles and Practice" Prentice-Hall, Inc. 1994, pp. 68-97.					
TN	G4	Department of Energy Coal Sample Bank and Database http://www.energy.psu.edu/arg/doesb.htm , June 4, 2002.					

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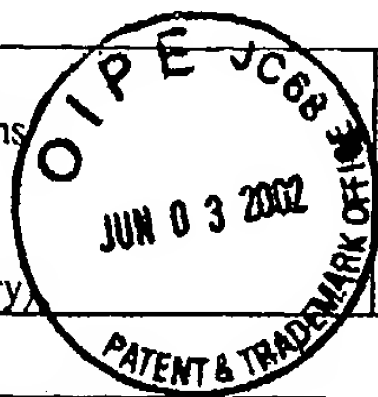
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TN	E1	3,181,613	May-1965	Krueger			
	E2	3,922,148	Nov-1975	Child			
	E3	3,924,680	Dec-1975	Terry			
	E4	5,020,596	Jun-1991	Hemsath			
	E5	5,229,102	Jul-1993	Minet et al.			
	E6	5,316,664	May-1994	Gregoli et al.			
	E7	5,366,012	Nov-1994	Lohbeck			
	E8	5,541,517	Jul-1996	Hartmann et al.			
	E9	5,861,137	Jan-1999	Edlund			
	E10	6,354,373	Mar-2001	Vercaemer et al.			
✓	E15	4,463,807	Aug-1984	Stoddard et al.			

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TN	E11	Coal, Encyclopedia of Chemical Technology, Kirk, R.E., Kroschwitz, J.I., Othmer, D.F., Wiley, New York, 4th edition, 1991, Vol. 6, pp. 423-488.
	E12	Cortez et al., UK Patent Application GB 2,068,014 A, Date of Publication: August 5, 1981.
	E13	Wellington et al., US Patent Application 60/273,354, Filed March 5, 2001.
✓	E14	The VertiTrak System Brochure, Baker Hughes, INT-01-1307A4, 2001 8 pages.

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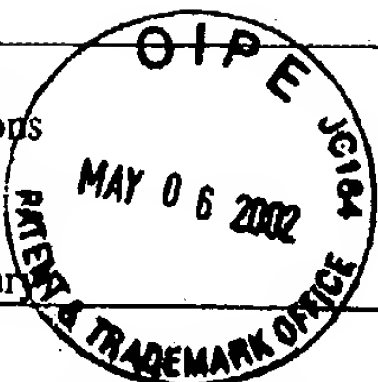
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TN	C1	1,269,747	6/1918	Rogers			
	C2	1,457,479	6/1923	Wolcott			
	C3	1,634,236	6/1927	Ranney			
	C4	2,630,307	3/1953	Martin			
	C5	2,685,930	8/1954	Albaugh			
	C6	2,703,621	3/1955	Ford			
	C7	2,771,954	11/1956	Jenks et al.			
	C8	2,793,696	5/1957	Morse			
	C9	2,890,754	6/1959	Hoffstrom et al.			
	C10	2,890,755	6/1959	Eurenius et al.			
	C11	2,906,340	9/1959	Herzog			
	C12	2,932,352	4/1960	Stegemeier			
	C13	2,958,519	11/1960	Hurley			
	C14	3,010,513	11/1961	Gerner			
	C15	3,010,516	11/1961	Schleicher			
	C16	3,036,632	5/1962	Koch et al.			
	C17	3,044,545	7/1962	Tooke			
	C18	3,061,009	10/1962	Shirley			
	C19	3,062,282	11/1962	Schleicher			
	C20	3,084,919	4/1963	Slater			
	C21	3,113,619	12/1963	Reichle			
	C22	3,116,792	1/1964	Purre			
	C23	3,120,264	2/1964	Barron			
	C24	3,127,935	4/1964	Poettmann et al			
	C25	3,127,936	4/1964	Eurenius			
	C26	3,132,692	5/1964	Marx et al.			
	C27	3,205,944	9/1965	Walton			
	C28	3,233,668	2/1966	Hamilton et al.			
	C29	3,273,640	9/1966	Huntington			
	C30	3,275,076	9/1966	Sharp			

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TN	C31	3,294,167	12/1966	Vogel			
	C32	3,352,355	11/1967	Putman			
	C33	3,379,248	4/1968	Strange			
	C34	3,605,890	9/1971	Holm			
	C35	3,617,471	11/1971	Schlinger et al.			
	C36	3,661,423	5/1972	Garrett			
	C37	3,770,398	11/1973	Abraham et al.			
	C38	3,882,941	5/1975	Pelofsky			
	C39	3,948,319	4/1976	Pritchett			
	C40	3,954,140	5/1976	Hendrick			
	C41	3,986,349	10/1976	Egan			
	C42	3,999,607	12/1976	Pennington et al.			
	C43	4,008,762	2/1977	Fisher et al.			
	C44	4,019,575	4/1977	Pisio et al.			
	C45	4,026,357	5/1977	Redford			
	C46	4,049,053	9/1977	Fisher et al.			
	C47	4,057,293	11/1977	Garrett			
	C48	4,067,390	1/1978	Camacho et al.			
	C49	4,069,868	1/1978	Terry			
	C50	4,084,637	4/1978	Todd			
	C51	4,114,688	9/1978	Terry			
	C52	4,144,935	3/1979	Bridges et al.			
	C53	4,183,405	1/1980	Magnie			
	C54	4,228,854	10/1980	Sacuta			
	C55	4,243,101	1/1981	Gruppung			
	C56	4,277,416	7/1981	Grant			
	C57	4,306,621	12/1981	Boyd et al.			
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V	C59	4,344,483	8/1982	Fisher et al.			

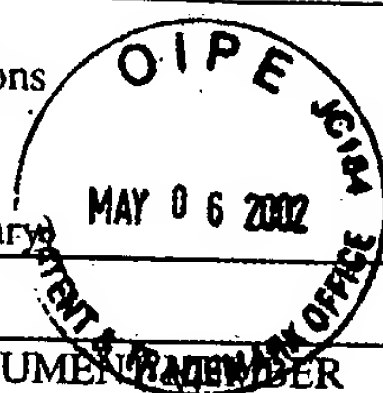
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SERIAL NO. 09/840,936

APPLICANT: Zhang, et al.

GROUP: 1764

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EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
TN	C60	4,353,418	10/1982	Hoekstra et al.			
	C61	4,384,613	5/1983	Owen et al.			
	C62	4,396,062	8/1983	Iskander			
	C63	4,397,732	8/1983	Hoover et al.			
	C64	4,444,255	4/1984	Geoffrey et al.			
	C65	4,448,251	5/1984	Stine			
	C66	4,448,252	5/1984	Stoddard et al.			
	C67	4,457,365	7/1984	Kasevich et al.			
	C68	4,476,927	10/1984	Riggs			
	C69	4,485,869	12/1984	Sresty et al.			
	C70	4,524,826	6/1985	Savage			
	C71	4,549,396	10/1985	Garwood et al.			
	C72	4,573,530	3/1986	Audeh et al.			
	C73	4,576,231	3/1986	Dowling et al.			
	C74	4,592,423	6/1986	Savage et al.			
	C75	4,608,818	9/1986	Goebel et al.			
	C76	4,637,464	1/1987	Forgac et al.			
	C77	4,651,825	3/1987	Wilson			
	C78	4,662,438	5/1987	Taflove et al.			
	C79	4,662,439	5/1987	Puri			
	C80	4,662,443	5/1987	Puri et al.			
	C81	4,691,771	9/1987	Ware et al.			
	C82	4,704,514	11/1987	Van Edmond et al.			
	C83	4,772,634	9/1988	Farooque			
	C84	4,787,452	11/1988	Jennings, Jr.			
	C85	4,817,711	4/1989	Jeambey			
	C86	4,818,370	4/1989	Gregoli et al.			
	C87	4,928,765	5/1990	Nielson			
	C88	5,064,006	11/1991	Waters et al.			
✓	C89	5,082,054	1/1992	Kiamanesh			

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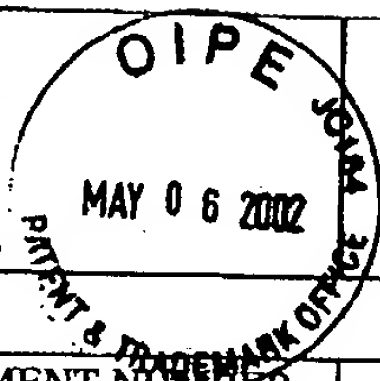
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ATTY. DKT. NO. 5659-03400/TH1959

SERIAL NO. 09/840,936

APPLICANT: Zhang, et al.

GROUP: 1764

FILING DATE: April 24, 2001

U.S. PATENT DOCUMENTS

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
TN	C90	5,082,055	1/1992	Hemsath			
	C91	5,217,076	6/1993	Masek			
	C92	5,261,490	11/1993	Ebinuma			
	C93	5,285,846	2/1994	Mohn			
	C94	5,289,882	3/1994	Moore			
	C95	5,411,104	5/1995	Stanley			
	C96	5,632,336	5/1997	Notz et al.			
	C97	5,713,415	2/1998	Bridges			
	C98	6,328,104	12/2001	Graue			
	D1	3,149,670	9/1964	Grant			
	D2	3,380,913	4/1968	Henderson			
	D3	3,794,116	2/1974	Higgins			
	D4	4,197,911	4/1980	Anada			
	D5	4,412,124	10/1983	Kobayashi			
✓	D8	3,316,962	5/1967	Lange			

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FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
TN	C99	2,015,460	10/1991	CA			
	C100	940558 A1	9/1999	EP			
	C101	01/81723 A1	11/2001	WO			
	C102	01/81505 A1	11/2001	WO			
	D6	1,165,361	4/1984	CA			
✓	D7	1,168,283	5/1994	CA			

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

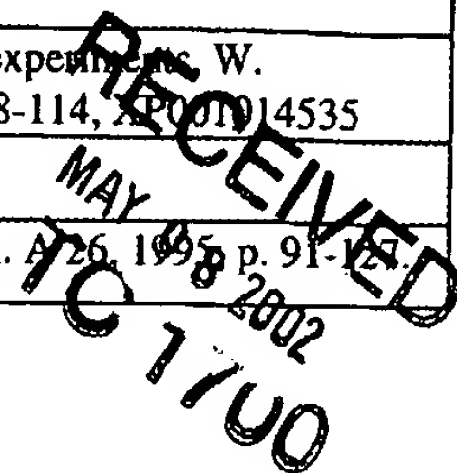
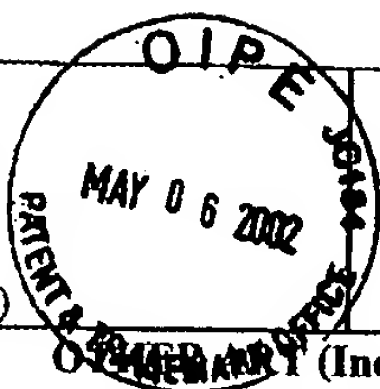
TN	C103	Appalachian Coals: Potential Reservoirs for Sequestering Carbon Dioxide Emissions from Power Plants While Enhancing CBM Production; C.W. Byer, et al., Proceedings of the International Coalbed Methane Symposium.
TN	C104	The Pros and Cons of Carbon Dioxide Dumping Global Warming Concerns Have Stimulated a Search for Carbon Sequestration Technologies; C. Hanisch, Environmental Science and Technology, American Chemical Society, Easton, PA.
TN	C105	Pilot Test Demonstrates How Carbon Dioxide Enhances Coal Bed Methane Recovery, Lanny Schoeling and Michael McGovern, Petroleum Technology Digest, September 2000, p. 14-15.

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Form PTO-1449 (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		ATTY. DKT. NO. 5659-03400/TH1959 APPLICANT: Zhang, et al. FILING DATE: April 24, 2001	SERIAL NO. 09/840,936 GROUP: 1764
(Including Author, Title, Date, Pertinent Pages, Etc.)			
TN	C106	In Situ Measurement of Some Thermoporoelectric Parameters of a Granite, Berchenko et al., Poromechanics, A Tribute to Maurice Biot, 1998, p. 545-550.	
TN	C107	Conversion characteristics of selected Canadian coals based on hydrogenation and pyrolysis experiments. W. Kalkreuth, C. Roy, and M. Steller. Geological Survey of Canada, Paper 89-8, 1989, pages 108-114, XP001014535	
TN	D9	Passey et al., US Patent Application Publication 2001/0049342 A1, December 6, 2001.	
TN	D10	Tar and Pitch, G. Collin and H. Hoeke. Ullmann's Encyclopedia of Industrial Chemistry, Vol. A26, 1995, p. 91-128.	



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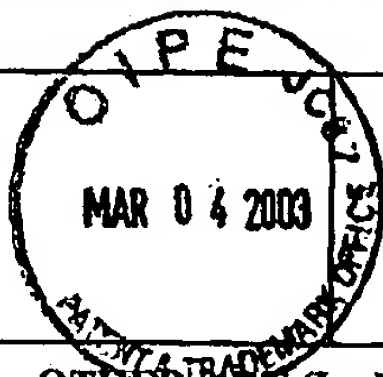
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GROUP: 1764

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OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

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Van Krevelen, COAL: Typology-Physics-Chemistry-Constitution, 1993, pp. 27, 42, 52, 322, 323, 324, 325, 326, 526, 527, 726.

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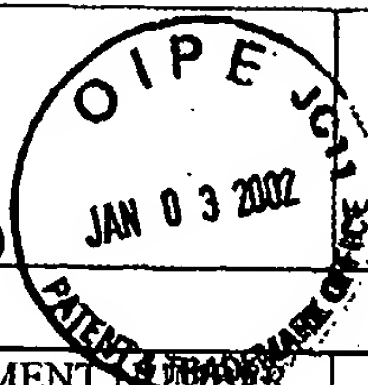
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FILING DATE: April 24, 2001

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EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
TN	A1	760,304	05/1904	Butler			
	A2	1,342,741	06/1920	Day			
	A3	1,510,655	10/1924	Clark			
	A4	1,666,488	02/1927	Crawshaw			
	A5	1,913,395	11/1929	Karrick			
	A6	2,423,674	07/1947	Agren			
	A7	2,444,755	07/1948	Steffen			
	A8	2,466,945	02/1946	Greene			
	A9	2,472,445	06/1949	Sprong			
	A10	2,484,063	10/1949	Ackley			
	A11	2,497,868	02/1950	Dalin			
	A12	2,548,360	04/1951	Germain			
	A13	2,593,477	04/1952	Newman et al.			
	A14	2,595,979	05/1952	Pevere et al.			
	A15	2,630,306	01/1952	Evans			
	A16	2,634,961	04/1953	Ljungstrom			
	A17	2,642,943	06/1953	Smith et al.			
	A18	2,670,802	03/1954	Ackley			
	A19	2,695,163	11/1954	Pearce et al.			
	A20	2,732,195	01-24-56	Ljungstrom			
	A21	2,734,579	02-14-56	Elkins			
	A22	2,780,449	02-05-57	Fisher et al.			
	A23	2,777,679	01/1957	Ljungstrom			
	A24	2,780,450	02/1957	Ljungstrom			
	A25	2,786,660	03/1957	Alleman			
	A26	2,789,805	04/1957	Ljungstrom			
	A27	2,804,149	08/1957	Kile			
	A28	2,841,375	07/1958	Salomonsson			
	A29	2,902,270	09/1959	Salomonsson et al.			
✓	A30	2,906,337	09/1959	Henning			

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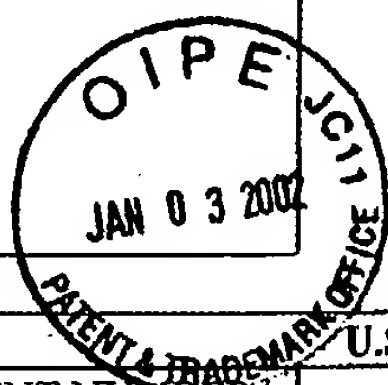
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U.S. PATENT DOCUMENTS							
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TN	A31	2,914,309	11/1959	Salomonsson			
	A32	2,923,535	02/1960	Ljungstrom			
	A33	2,939,689	06/1960	Ljungstrom			
	A34	2,954,826	10/1960	Sievers			
	A35	2,974,937	03/1961	Kiel			
	A36	2,994,376	08/1961	Crawford et al.			
	A37	2,998,457	08/1961	Paulsen			
	A38	3,004,603	10/1961	Rogers et al.			
	A39	3,007,521	11/1961	Trantham et al.			
	A40	3,095,031	06/1963	Eurenus et al.			
	A41	3,105,545	10/1963	Prats et al.			
	A42	3,106,244	10/1963	Parker			
	A43	3,110,345	11/1963	Reed et al.			
	A44	3,113,623	12/1963	Krueger			
	A45	3,114,417	12/1963	McCarthy			
	A46	3,131,763	05/1964	Kunetka et al.			
	A47	3,139,928	07/1964	Broussard			
	A48	3,142,336	07/1964	Doscher			
	A49	3,149,672	10/1964	Orkiszewski et al.			
	A50	3,163,745	12/1964	Boston			
	A51	3,164,207	01/1965	Thessen et al.			
	A52	3,182,721	05/1965	Hardy			
	A53	3,183,675	05/1965	Schroeder			
	A54	3,191,679	06/1965	Miller			
	A55	3,205,946	10/1965	Prats et al.			
	A56	3,207,220	10/1965	Williams			
	A57	3,208,531	10/1965	Tamplen			
	A58	3,209,825	10/1965	Alexander et al.			

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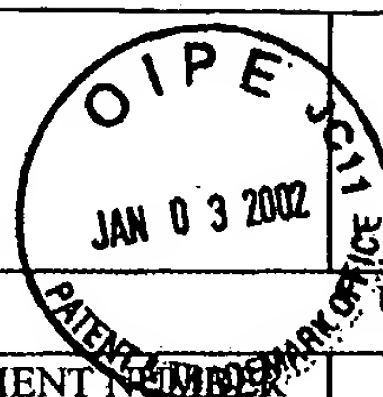
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EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
TN	A59	3,237,689	03/1966	Justheim			
	A60	3,241,611	03/1966	Dougan			
	A61	3,250,327	05/1966	Crider			
	A62	3,267,680	08/1966	Schlumberger			
	A63	3,284,281	11/1966	Thomas			
	A64	3,338,306	08/1967	Cook			
	A65	3,528,501	09/1970	Parker			
	A66	3,595,082	07/1971	Miller et al.			
	A67	3,973,628	08/1976	Colgate			
	A68	3,992,148	11/1975	Child			
	A69	3,993,132	11/1977	Garrett			
	A70	4,016,239	04/1977	Fenton			
	A71	4,076,761	02/1978	Chang et al.			
	A72	4,089,372	05/1978	Terry			
	A73	4,093,026	06/1978	Ridley			
	A74	4,096,163	06/1978	Chang, et al.			
	A75	4,130,575	12/1978	Jorn et al.			
	A76	4,133,825	01/1979	Stroud et al.			
	A77	4,138,442	02/1979	Chang et al.			
	A78	4,186,801	02/1980	Madgavkar et al.			
	A79	4,250,230	02/1981	Terry			
	A80	4,250,962	02/1981	Madgavkar et al.			
	A81	4,273,188	06/1981	Vogel et al.			
	A82	4,274,487	06/1981	Hollingsworth et al.			
	A83	4,299,086	11/1981	Madgavkar et al.			
	A84	4,299,285	11/1981	Tsai et al.			
	A85	4,359,687	11/1982	Vinegar et al.			
	A86	4,363,361	12/1982	Madgavkar et al.			
	A87	4,366,668	01/1983	Madgavkar et al.			
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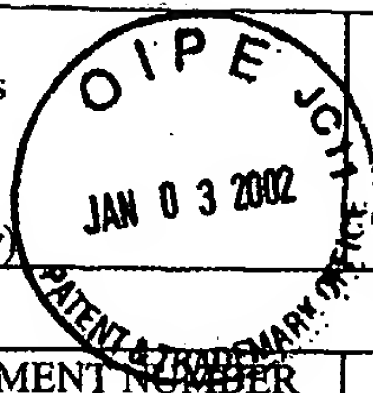
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GROUP: 1764

FILING DATE: April 24, 2001

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EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
TN	A89	4,381,641	05/1983	Madgavkar et al.			
	A90	4,398,151	08/1983	Vinegar et al.			
	A91	4,407,973	10/1983	van Dijk et al.			
	A92	4,409,090	10/1983	Hanson et al.			
	A93	4,444,258	04/1984	Kalmar			
	A94	4,501,445	02/1985	Gregoli			
	A95	4,530,401	07/1985	Hartman et al.			
	A96	4,540,882	10/1985	Vinegar et al.			
	A97	4,542,648	10/1985	Vinegar et al.			
	A98	4,570,715	02/1986	Van Meurs et al.			
	A99	4,571,491	02/1986	Vinegar et al.			
	A100	4,572,299	02/1986	Vanegmond et al.			
	A101	4,583,046	04/1986	Vinegar et al.			
	A102	4,583,242	04/1986	Vinegar et al.			
	A103	4,594,468	06/1986	Minderhoud			
	A104	4,597,441	07/1986	Ware et al.			
	A105	4,605,680	08/1986	Beuther et al.			
	A106	4,613,754	09/1986	Vinegar et al.			
	A107	4,616,705	10/1986	Stegemeier et al.			
	A108	4,635,197	01/1987	Vinegar et al.			
	A109	4,640,352	02/1987	Vanmeurs et al.			
	A110	4,644,283	02/1987	Vinegar et al.			
	A111	4,658,215	04/1987	Vinegar et al.			
	A112	4,663,711	05/1987	Vinegar et al.			
	A113	4,671,102	06/1987	Vinegar et al.			
	A114	4,716,960	01/1988	Eastlund et al.			
	A115	4,719,423	01/1988	Vinegar et al.			
	A116	4,728,892	03/1988	Vinegar et al.			
	A117	4,730,162	03/1988	Vinegar et al.			
N	A118	4,743,854	05/1988	Vinegar et al.			

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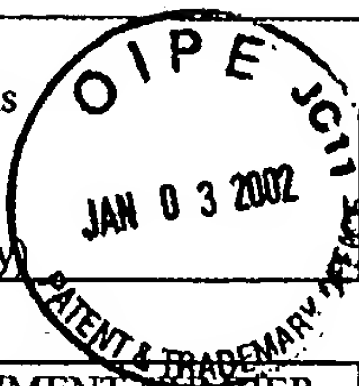
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GROUP: 1764

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TN	A119	4,762,425	08/1988	Shakkottai et al.			
	A120	4,769,602	09/1988	Vinegar et al.			
	A121	4,769,606	09/1988	Vinegar et al.			
	A122	4,793,656	12/1988	Siddoway et al.			
	A123	4,827,761	05/1989	Vinegar et al.			
	A124	4,848,924	07/1989	Nuspl et al.			
	A125	4,856,341	08/1989	Vinegar et al.			
	A126	4,860,544	08/1989	Krieg et al.			
	A127	4,866,983	09/1989	Vinegar et al.			
	A128	4,884,455	12/1989	Vinegar et al.			
	A129	4,886,118	12/1989	Van Meurs et al.			
	A130	4,927,857	05/1990	McShea III et al.			
	A131	4,974,425	12/1990	Krieg et al.			
	A132	4,983,319	01/1991	Gregoli et al.			
	A133	4,984,594	01/1991	Vinegar et al.			
	A134	4,987,368	01/1991	Vinegar			
	A135	4,994,093	02/1991	Wetzel et al.			
	A136	5,014,788	05/1991	Puri et al.			
	A137	5,046,559	10/1991	Glandt			
	A138	5,050,386	09/1991	Krieg et al.			
	A139	5,060,287	10/1991	Van Egmond			
	A140	5,060,726	10/1991	Glandt et al.			
	A141	5,065,818	11/1991	Van Egmond			
	A142	5,168,927	12/1992	Stegemeier et al.			
	A143	5,189,283	02/1993	Carl, Jr. et al.			
	A144	5,190,405	03/1993	Vinegar et al.			
	A145	5,207,273	05/1993	Cates et al.			
	A146	5,211,230	05/1993	Ostapovich et al.			
	A147	5,226,961	07/1993	Nahm et al.			
	A148	5,229,583	07/1993	van Egmond et al.			

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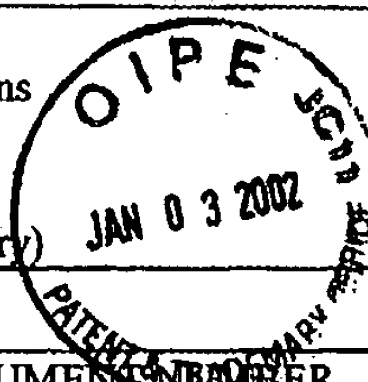
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	APPLICANT: Zhang, et al.	GROUP: 1764
	FILING DATE: April 24, 2001	



U.S. PATENT DOCUMENTS

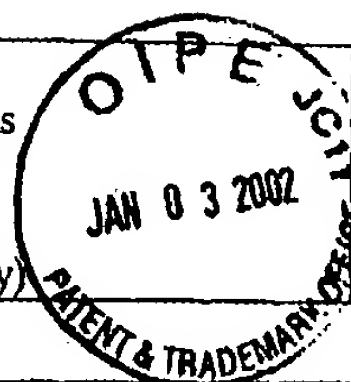
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TN	A149	5,236,039	08/1993	Edelstein et al.			
	A150	5,255,742	10/1993	Mikus			
	A151	5,297,626	03/1994	Vinegar et al.			
	A152	5,306,640	04/1994	Vinegar et al.			
	A153	5,318,116	06/1194	Vinegar et al.			
	A154	5,339,897	08/1994	Leaute			
	A155	5,340,467	08/1994	Gregoli et al.			
	A156	5,349,859	09/1994	Kleppe			
	A157	5,388,640	02/1995	Puri et al.			
	A158	5,388,641	02/1995	Yee et al.			
	A159	5,388,642	02/1995	Puri et al.			
	A160	5,388,643	02/1995	Yee et al.			
	A161	5,388,645	02/1995	Puri et al.			
	A162	5,391,291	02/1995	Winqvist et al.			
	A163	5,392,854	02/1995	Vinegar et al.			
	A164	5,404,952	04/1995	Vinegar et al.			
	A165	5,409,071	04/1995	Wellington et al.			
	A166	5,411,089	05/1995	Vinegar et al.			
	A167	5,415,231	05/1995	Northrop et al.			
	A168	5,431,224	07/1995	Laali			
	A169	5,433,271	07/1995	Vinegar et al.			
	A170	5,437,506	08/1995	Gray			
	A171	5,439,054	08/1995	Chaback et al.			
	A172	5,454,666	10/1995	Chaback et al.			
	A173	5,497,087	03/1996	Vinegar et al.			
	A174	5,498,960	03/1996	Vinegar et al.			
	A175	5,525,322	06/1996	Willms			
	A176	5,553,189	09/1996	Stegemeier et al.			
	A177	5,554,453	09/1996	Steinfeld et al.			
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TN	A179	5,624,188	04/1997	West			
	A180	5,656,239	08/1997	Stegemeier et al.			
	A181	5,676,212	10/1997	Kuckes			
	A182	5,862,858	01/1999	Wellington et al.			
	A183	5,899,269	05/1999	Wellington et al.			
	A184	5,968,349	10/1999	Duyvesteyn et al.			
	A185	5,984,010	11/1999	Elias et al.			
	A186	5,985,138	11/1999	Humphreys			
	A187	5,997,214	12/1999	de Rouffignac et al.			
	A188	6,016,867	01/2000	Gregoli et al.			
	A189	6,016,868	01/2000	Gregoli et al.			
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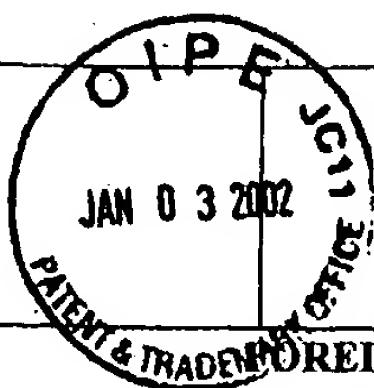
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TN	A205	123,136	11/1948	Sweden			

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ATTY. DKT. NO. 5659-03400/TH1959

SERIAL NO. 09/840,936

APPLICANT: Zhang, et al.

GROUP: 1764

FILING DATE: April 24, 2001

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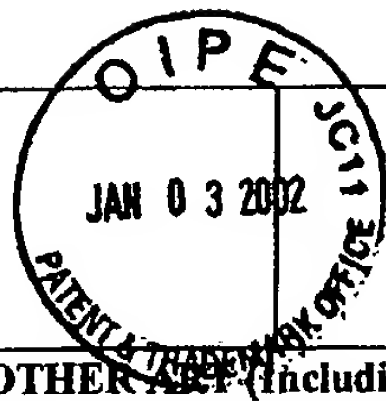
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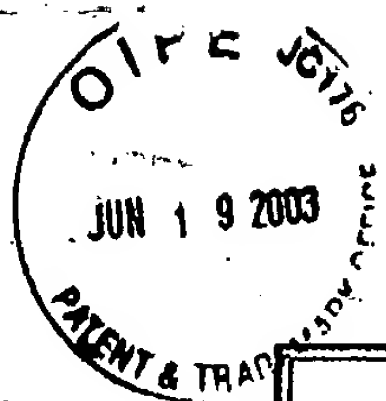
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Title of
Invention

IN SITU THERMAL PROCESSING OF A HYDROCARBON
CONTAINING FORMATION TO PRODUCE A MIXTURE
WITH OXYGENATED HYDROCARBONS


Application Number: 09/840936
Confirmation Number: 5994
First Named Applicant: Etuan Zhang
Attorney Docket Number: 5659-03400
Art Unit: 1764
Examiner: Marian C. Knode
Search string: (3026940 or

US Patent Documents

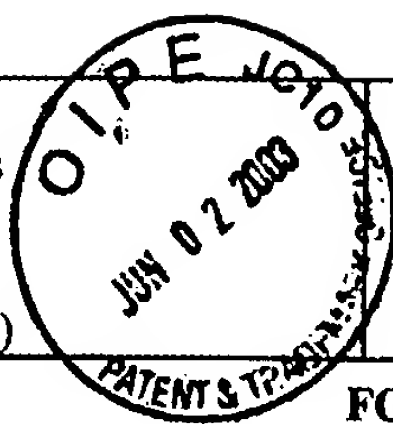
Note: Applicant is not required to submit a paper copy of cited US Patent Documents

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TV	1	3026940	1962-03-27	Spitz			
TV	2	3947683	1976-03-30	Schultz et al.			

Signature

Examiner Name	Date
	8/24/04

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ATTY. DKT. NO. 5659-03400/TH1959

SERIAL NO. 09/840,936

APPLICANT: Zhang et al.

GROUP: 1764

FILING DATE: April 24, 2001

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FORMATION TO PRODUCE A MIXTURE WITH OXYGENATED
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Application Number: 09/840936
Confirmation Number: 5994
First Named Applicant: Etuan Zhang
Attorney Docket Number: 5659-03300
Art Unit: 3673
Examiner: Unknown Unknown
Search string: (3986556 or 4031956 or 4140180 or 4412585 or 4501326 or 4524827 or 4585066
or 4776638 or 4856587 or 5517593 or 5099918 or 5751895 or 6015015 or
6112808),pn.


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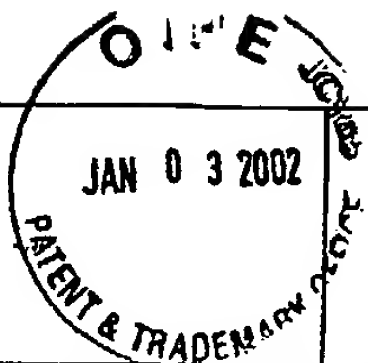
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Signature

Examiner Name	Date
	9/22/04

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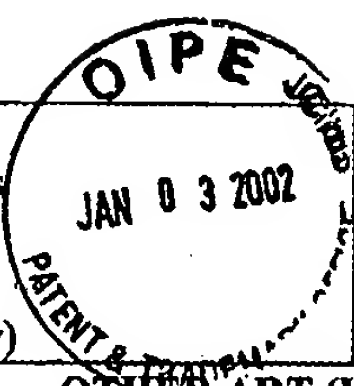
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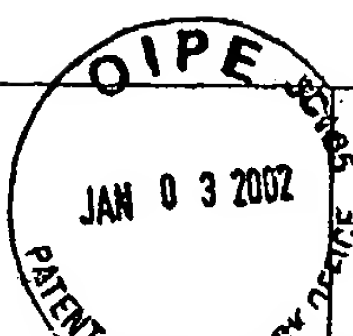
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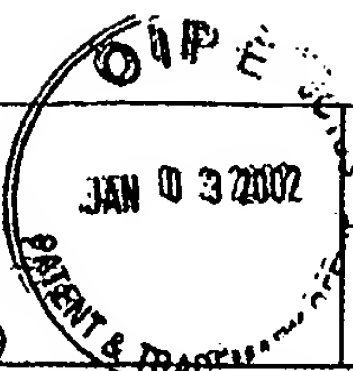
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List of Patents and Publications
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ATTY. DKT. NO. 5659-03400/TH1959

SERIAL NO. 09/840,936

APPLICANT: Zhang, et al.

GROUP: 1764

FILING DATE: April 24, 2001

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

TN	A338	Quantitative Analysis and Evolution of Sulfur-Containing Gases from Oil Shale Pyrolysis by Triple Quadrupole Mass Spectrometry, Wong et al., November 1983 (34 pages).
	A339	Quantitative Analysis & Kinetics of Trace Sulfur Gas Species from Oil Shale Pyrolysis by Triple Quadrupole Mass Spectrometry (TQMS), Wong et al., July 5-7, 1983 (34 pages).
	A340	Application of Self-Adaptive Detector System on a Triple Quadrupole MS/MS to High Explosives and Sulfur-Containing Pyrolysis Gases from Oil Shale, Carla M. Wong & Richard W. Crawford, October 1983 (17 pages).
	A341	An Evaluation of Triple Quadrupole MS/MS for On-Line Gas Analyses of Trace Sulfur Compounds from Oil Shale Processing, Wong et al., January 1985 (30 pages).
	A342	Source and Kinetics of Sulfur Species in Oil Shale Pyrolysis Gas by Triple Quadrupole Mass Spectrometry, Wong et al., October 1983 (14 pages).
	A343	The Centralia Partial Seam CRIP Underground Coal Gasification Experiment, Cena et al., June 1984 (38 pages).
	A344	Results of the Centralia Underground Coal Gasification Field Test, Hill et al., August 1984 (18 pages).
	A345	Excavation of the Partial Seam Crip Underground Coal Gasification Test Site, Cena et al., August 14, 1987 (11 pages).
	A346	Assessment of the CRIP Process for Underground Coal Gasification: The Rocky Mountain I Test, Cena et al., August 1988 (22 pages).
	A347	Mild Coal Gasification-Product Separation, Pilot-Unit Support, Twin Screw Heat Transfer, and H ₂ S Evolution, Camp et al., August 9, 1991 (12 pages).
✓	A348	Underground Coal Gasification Site Selection and Characterization in Washington State and Gasification Test Design Randolph Stone & R. W. Hill, September 10, 1980 (62 pages).

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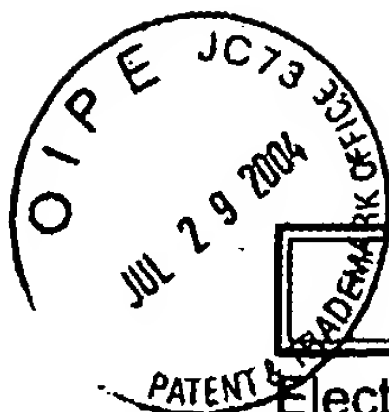
Electronic Version v18

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Title of Invention	IN SITU PROCESSING OF A HYDROCARBON CONTAINING FORMATION TO PRODUCE A MIXTURE WITH OXGENATED HYDROCARBONS						
Application Number: 09/840936							
Confirmation Number: 5994							
First Named Applicant: Etuan Zhang							
Attorney Docket Number: 5659-03400							
Art Unit: 1764							
Examiner: Tam M. Nguyen							
Search string: (6698515 or 6702016 or 6708758 or 6712135 or 6712136 or 6712137 or 6715546 or 6715547 or 6715549 or 6715548 or 6719047 or 6722431 or 6722430 or 6722429 or 6725920 or 6725921 or 6725928 or 6729397 or 6729396 or 6729401 or 6729395 or 6732794 or 6732796 or 6736215 or 6739394 or 6739393 or 6742593 or 6742587 or 6742589 or 6742588 or 6745837 or 6745831 or 6749021 or 6752210 or 6758268 or 6763886 or 6769485 or 6769483 or 6581684 or 6588504 or 6588503 or 6591906 or 6591907 or 6607033 or 6609570 or 6688387 or 6761216 or 20040069486 or 20040015023 or 20030213594 or 20040040715 or 20040020642 or 20040108111).pn.							
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1	1	6698515	2004-03-02	Karanikas et al.			
2	2	6702016	2004-03-09	de Rouffignac et al.			
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4	4	6712135	2004-03-30	Wellington et al.			
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6	6	6712137	2004-03-30	Vinegar et al.			



7	6715546	2004-04-06	Vinegar et al.
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9	6715549	2004-04-06	Wellington et al.
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12	6722431	2004-04-20	Karanikas et al.
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15	6725920	2004-04-27	Zhang et al.
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22	6732794	2004-05-11	Wellington et al.
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24	6736215	2004-05-18	Maher et al.
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41	6588503	2004-07-08	Karanikas et al.
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ELECTRONIC INFORMATION DISCLOSURE STATEMENT

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Title of
Invention

IN SITU THERMAL PROCESSING OF A HYDROCARBON
CONTAINING FORMATION TO PRODUCE A MIXTURE
WITH OXYGENATED HYDROCARBONS

Application Number: 09/840936



Confirmation Number: 5994

First Named Applicant: Etuan Zhang

Attorney Docket Number: 5659-03400

Art Unit: 1764

Examiner: T. M. Nguyen

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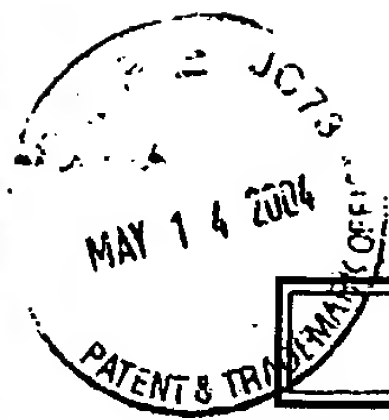
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Examiner Name	Date
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ELECTRONIC INFORMATION DISCLOSURE STATEMENT

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Invention

IN SITU THERMAL PROCESSING OF A HYDROCARBON
CONTAINING FORMATION TO PRODUCE A MIXTURE
WITH OXYGENATED HYDROCARBONS

Application Number: 09/840936
Confirmation Number: 5994
First Named Applicant: Etuan Zhang
Attorney Docket Number: 5659-03600
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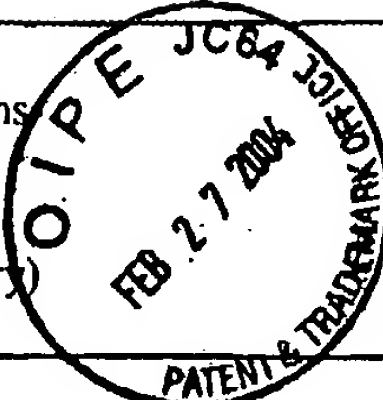
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Examiner Name	Date
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Form PTO-1449 (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)				ATTY. DKT. NO. 5659-03400 APPLICANT: Zhang et al. FILING DATE: April 24, 2001		SERIAL NO. 09/840,936 CONFIRMATION NO.: 5994 ART UNIT: 1764	
U.S. PATENT DOCUMENTS							
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TN	U11	4006778	2/8/1977	Redford et al.			
OTHER ART (including Author, Title, Date, Pertinent Pages, etc.)							
TN	AA11	Van Krevelen, D. W.; COAL: Typology-Physics-Chemistry-Constitution, 1993, p. 371.					

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Title of Invention	IN SITU THERMAL PROCESSING OF A HYDROCARBON CONTAINING FORMATION TO PRODUCE A MIXTURE WITH OXYGENATED HYDROCARBONS																				
<p>Application Number: 09/840936 Confirmation Number: 5994 First Named Applicant: Etuan Zhang Attorney Docket Number: 5659-03400 Art Unit: 1764 Examiner: Glenn A. Caldarola Search string: (3947656).pn.</p> <p>US Patent Documents</p> <p>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</p> <table border="1"><thead><tr><th>init</th><th>Cite.No.</th><th>Patent No.</th><th>Date</th><th>Patentee</th><th>Kind</th><th>Class</th><th>Subclass</th></tr></thead><tbody><tr><td>JN</td><td>1</td><td>3947656</td><td>1976-03-30</td><td>Lodi</td><td></td><td></td><td></td></tr></tbody></table> <p>Signature</p> <table border="1"><thead><tr><th>Examiner Name</th><th>Date</th></tr></thead><tbody><tr><td></td><td>09/22/04</td></tr></tbody></table>		init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass	JN	1	3947656	1976-03-30	Lodi				Examiner Name	Date		09/22/04
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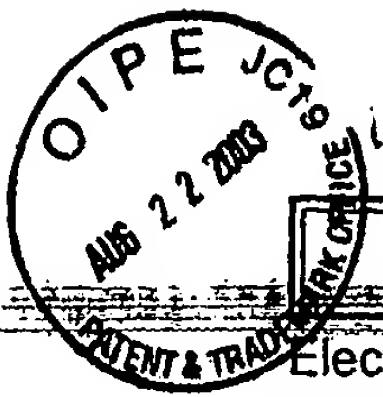


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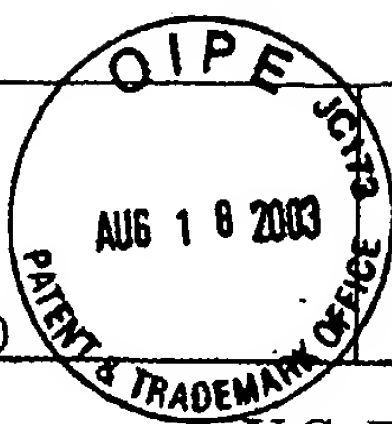


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Confirmation Number: 5994							
First Named Applicant: Etuan Zhang							
Attorney Docket Number: 5659-03400							
Art Unit: 1764							
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ATTY. DKT. NO. 5659-03400

APPLICANT: Zhang et al.

FILING DATE: April 24, 2001

SERIAL NO. 09/840,936

GROUP: 1764

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TN	S5	2,857,002	10/21/1958	Pevere et al.			
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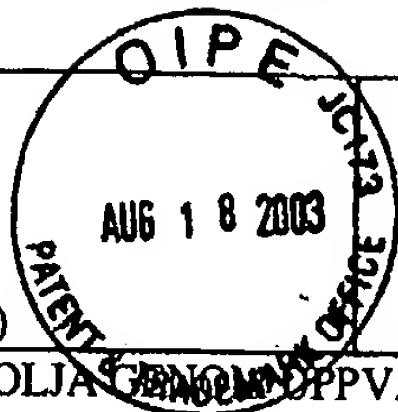
TN	T02	Burnham, Alan, K. "Oil Shale Retorting Dependence of timing and composition on temperature and heating rate", January 27, 1995, (23 pages).					
	T03	Burnham et al. "A Possible Mechanism of Alkene/Alkane Production in Oil Shale Retorting, (7 pages).					
	T04	Campbell, et al., "Kinetics of oil generation from Colorado Oil Shale" IPC Business Press, Fuel, 1978, (3 pages).					
	T05	Cummins et al. "Thermal Degradation of Green River Kerogen at 150° to 350 °C", Report of Investigations 7620, U.S. Government Printing Office, 1972, (pages 1-15).					
	T06	Cook, et al. "The Composition of Green River Shale Oils", United Nations Symposium on the Development and Utilization of Oil Shale Resources, Tallinn, 1968, (pages 1-23).					
	T07	Hill et al., "The Characteristics of a Low Temperature in situ Shale Oil" American Institute of Mining, Metallurgical & Petroleum Engineers, 1967 (pages 75-90)..					
	T08	Dinneen, et al. "Developments in Technology for Green River Oil Shale" United Nations Symposium on the Development and Utilization of Oil Shale Resources, Tallinn, 1968, (pages 1-20).					
	T09	De Rouffignac, E. "In Situ Resistive Heating of Oil Shale for Oil Production-A Summary of the Swedish Data, (4 pages).					
	T10	Dougan, et al. "The Potential for in situ Retorting of Oil Shale in the Piceance Creek Basin of Northwestern Colorado", Quarterly of the Colorado School of Mines (pages 57-72).					
	T11	Hill et al. "Direct Production of Low Pour Point High Gravity Shale Oil" I&EC Product Research and Development, 1967, Volume 6, (pages 52-59).					
	T12	Yen et al., "Oil Shale" Developments in Petroleum Science, 5, Elsevier Scientific Publishing Co., 1976 (pages 187-198).					
	T13	SSAB report, "A Brief Description of the Ljungstrom Method for Shale Oil Production," 1950, (12 pages).					
	T14	Salomonsson G., SSAB report, "The Lungstrom In Situ-Method for Shale Oil Recovery, 1950 (28 pages)					
	T15	"Swedish shale oil-Production method in Sweden," Organisation for European Economic Co-operation, 1952, (70 pages).					
	T16	SSAB report, "Kvarn Torp" 1958, (36 pages).					
	T17	SSAB report, "Kvarn Torp" 1951 (35 pages).					
	T18	SSAB report, "Summary study of the shale oil works at Narkes Kvarntorp" (15 pages).					
✓	T19	Vogel et al. "An Analog Computer for Studying Heat Transfrer during a Thermal Recovery Process," AIME Petroleum Transactions, 1955 (pages 205-212).					

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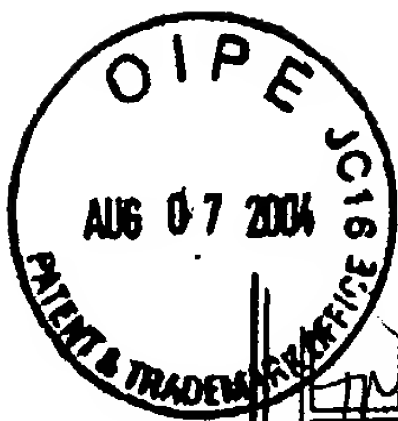
T20	"SKIFEROLJAGRANING OCH OPPVARMNING AV SKIFFERBERGET," Faxin Department och Namder, 1941, (3 pages)
T21	"Aggregleringens orsaker och ransoneringen grunder", Av director E.F.Cederlund I Statens livesmedelskonmission (1page).
T22	Ronnby, E. "KVARNTORP-Sveriges Storsta skifferoljeindustri," 1943, (9 pages)
T23	SAAB report, "The Swedish Shale Oil Industry," 1948 (8 pages).
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T30	Helander et al., Santa Cruz, California, Field Test of Fluidized Bed Burners for the Lins Method of Oil Recovery" 1959, (86 pages) English.
T31	SSAB report, "Bradford Residual Oil, Athabasa Ft. McMurray" 1951, (207 pages), partial translation.
T32	"Lins Burner Test Results-English" 1959-1960
T33	SSAB "Annual Reports, SSAB Laboratory, Address Annually Issues-Shale and Ash, Oil, Gas, Waste Water, Analytical", 1953-1954, (166 pages). Swedish
T34	SSAB report, "Financial Matter, Swedish taxes, etc.," 1960-1961 (37 pages). Swedish
T35	SSAB report, "Cost For Mining," 1959-1979 (13 pages). Swedish
T36	SSAB report, "Cost Comparison of Mining and Processing of Shale and Dolomite Using Various Production Alternatives", 1960, (64 pages). Swedish
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T39	SAAB, "Photos", (18 pages).
T40	SAAB report, "Swedish Geological Survey Report, Plan to Delineate Oil shale Resource in Narkes Area (near Kvarntorp)," 1941 (13 pages). Swedish.
T41	SAAB report, "Recovery Efficiency," 1941, (61 pages). Swedish.
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T43	SSAB report, "Ojematinigar vid Norrtorp," 1945 (141 pages).
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T45	SSAB report, "Secondary Recovery after LINS," 1945 (78 pages)
T46	SSAB report, "Maps and Diagrams, Geology," 1947 (137 pages). Swedish.

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US Published Applications

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Signature

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